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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/422,804	10/22/1999	EDWIN SOUTHERN	00263/PP/IR	6012

7590 02/10/2006  
Wenderoth, Lind & Ponack  
2033 K street N.W  
Washington, DC 20006

COPY

EXAMINER	
BRUSCA, JOHN S	
ART UNIT	PAPER NUMBER
1631	

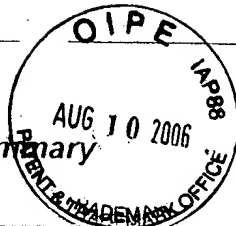
DATE MAILED: 02/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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# Office Action Summary



Application No.

09/422,804

Applicant(s)

SOUTHERN, EDWIN

Examiner

John S. Brusca

Art Unit

1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 17-99 is/are pending in the application.
- 4a) Of the above claim(s) 40-95 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-26, 38, 39 and 96-99 is/are rejected.
- 7) ☒ Claim(s) 27-37 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. PCT/GB89/00460.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/8/05, 12/20/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This application has been reassigned to a new examiner.
2. Due to new grounds of rejection not necessitated by the applicant's amendments this is a non-final rejection.

### *Election/Restrictions*

3. Claims 40-99, filed in the amendment filed 06 December 2000 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

4. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  1. Claims <sup>17</sup>~~4~~-39 and 96-99 drawn to oligonucleotide arrays, classified in class 536, subclass 24.3.
  2. Claims 40, 42, 43, multiple dependent claims 44-56, and 57, drawn to a method of making an oligonucleotide array by attachment of presynthesized oligonucleotides, classified in class 435, subclass 6
  3. Claims 41, multiple dependent claims 44-56, and 58-62, drawn to a method of making an oligonucleotide array by in situ synthesis of oligonucleotides, classified in class 536, subclass 25.3
  4. Claims 63-67, multiple dependent claim 70-86, 89, 90, and 95, drawn to a method of using an oligonucleotide array to assay for hybridization of an applied sample, classified in class 435, subclass 6.

5. Claims 68, 69, multiple dependent claims 70-86, and 87, drawn to a method of using an oligonucleotide array comprising all possible sequences, classified in class 435 subclass 6.
6. Claim 88, drawn to a method of using an oligonucleotide array comprising iterative hybridization with larger oligonucleotide applied samples, classified in class 435, subclass 6.
7. Claims 91-94, drawn to a method of using an oligonucleotide array to assay a nucleotide sequence of an applied sample, classified in class 435, subclass 6.

The inventions are distinct, each from the other because of the following reasons:

5. Inventions 1 and Inventions 2-3 are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the array of invention 1 could be made by either the method of invention 2 or 3.
6. Inventions 1 and Inventions 4-7 are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the array of invention 1 can be used in any of the methods of inventions 4-7.
7. Inventions 2-3 and Inventions 4-7 are directed to related methods. The related inventions are distinct if the inventions as claimed do not overlap in scope, i.e., are mutually exclusive; the

Art Unit: 1631

inventions as claimed are not obvious variants; and the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect. See MPEP § 806.05(j). In the instant case, inventions 2-3 are drawn to methods of making oligonucleotide arrays which comprise different steps, and inventions 4-7 are drawn to methods of using oligonucleotide arrays which comprise different steps and produce different results.

8. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

9. Because these inventions are distinct for the reasons given above and the search required for Groups 1-7 are not coextensive, restriction for examination purposes as indicated is proper.

10. Since applicant has received an action on the merits for the originally presented invention of Invention 1, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 40-95 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

#### ***Information Disclosure Statement***

11. Many references in the Information Disclosure Statements filed 08 December 2005 and 20 December 2005 have not been considered because the references are not publications.

#### ***Double Patenting***

12. The rejection for obviousness-type double patenting over U.S. Patent No. 6,054,270 in the Office action mailed 13 July 2005 has been withdrawn in view of the terminal disclaimer filed 28 August 2001.

Art Unit: 1631

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. An obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but an examined application claim is not patentably distinct from the reference claim(s) because the examined claim is either anticipated by, or would be obvious

Art Unit: 1631

over, the reference claim(s). see, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985).

15. Claims 17, 20, 25, 26, and 39 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 17-42 of copending Application No. 10/115077. Although the conflicting claims are not identical, they are not patentably distinct from each other because the copending claims are either species of the instant claims or have only minor differences.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

#### ***Claim Rejections - 35 USC § 102***

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

17. Claims 17, 19, 21-24, and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Stavrianopoulos et al. (reference KB in the Information Disclosure Statement filed 08 December 2005)

The claims are drawn to arrays of oligonucleotides comprising different known oligonucleotides at different positions. In some embodiments the array has a glass substrate. In some embodiments the oligonucleotides are attached to the support by a covalent linkage.

Art Unit: 1631

Regarding the limitations of claims 23 and 24, it is brought to the Applicant's attention that a product by process claim is examined for novelty and obviousness of the claimed product only, and that no consideration is given to the novelty or obviousness of the method of making the claimed product. See M.P.E.P. 2113.

Stravrianopoulos et al. shows in column 1, lines 29-30, and column 5 an array of oligonucleotides, with a substrate that may be plastic or glass. Stavrianopoulos et al. shows in column 8, lines 40-45 that various (meaning different) polynucleotide samples may be present in the array.

***Claim Rejections - 35 USC § 103***

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claims 17, 18, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stavrianopoulos et al. in view of Cooke et al.

The claims are drawn to arrays of oligonucleotides comprising different known oligonucleotides at different positions. In some embodiments there are at least 72 samples in the array.

Stavrianopoulos et al. shows in column 1, lines 29-30, and column 5 an array of oligonucleotides, with a substrate that may be plastic or glass. Stavrianopoulos et al. shows in column 8, lines 40-45 that various (meaning different) polynucleotide samples may be present in the array. Stavrianopoulos et al. shows use of conventional microtiter plates to contain the



Art Unit: 1631

samples in columns 12, lines 20-24. Stavrianopoulos et al. does not show the number of wells that exist in conventional microtiter plates.

Cooke et al. shows microtiter plates that differ from the conventional plates by virtue of being made from disposable plastic. Cooke et al. shows in figure 1 a microtiter plate with an 8x12 matrix of wells for a total of 96 wells.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Stavrianopoulos et al. by use of the 96 well microtiter plate of Cooke et al. for the purpose of analyzing up to 96 samples in one array.

20. Claims 17 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stavrianopoulos et al. in view of Suggs et al.

The claims are drawn to arrays of oligonucleotides comprising different known oligonucleotides at different positions. In some embodiments the oligonucleotides in the array are between 8 and 20 nucleotides in length.

Stavrianopoulos et al. shows in column 1, lines 29-30, and column 5 an array of oligonucleotides, with a substrate that may be plastic or glass. Stavrianopoulos et al. shows in column 8, lines 40-45 that various (meaning different) polynucleotide samples may be present in the array. Stavrianopoulos et al. shows use of conventional microtiter plates to contain the samples in columns 12, lines 20-24. Stavrianopoulos et al. shows that the applied samples may be of small or high molecular weight in column 1, lines 29-30. Stavrianopoulos et al. shows in column 5, lines 63-67 that oligonucleotides used to hybridize to the samples on the array should be at least 25 nucleotides in length to allow for stable hybridization with the complementary

Art Unit: 1631

nucleotides of the sample on the array. Stavrianopoulos et al. does not show use of samples on an array of between 8 and 20 nucleotides in length.

Suggs et al. shows in the abstract, methods section on page 6613 and Table 1 the synthesis and use of oligonucleotide probes that are 15 nucleotides in length. Suggs et al. shows in figures 1 and 2 that such probes may be used to hybridize specifically to a complementary sequence.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Stavrianopoulos et al. by use of the 15mer probes of Suggs et al. because Suggs et al. shows that oligonucleotides of that length are long enough to allow for specific hybridization and a functional equivalent to longer oligonucleotides, and further obvious because shorter oligonucleotides allow for reduced labor and cost for synthesis.

21. Claims 96, 98, and 99 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stavrianopoulos et al. in view of Caulfield et al.

The claims are drawn to kits comprising arrays of oligonucleotides comprising different known oligonucleotides at different positions and scanners for detecting hybridization to the array.

Stavrianopoulos et al. shows in column 1, lines 29-30, and column 5 an array of oligonucleotides, and shows a microtiter substrate in column 12, lines 20-24. Stavrianopoulos et al. shows in column 8, lines 40-45 that various (meaning different) polynucleotide samples may be present in the array. Stavrianopoulos et al. shows colorimetric assays of hybridization in column 6-7 and table 1. Stavrianopoulos et al. does not show computer controlled scanners of colorimetric assays.

Art Unit: 1631

Caulfield et al. shows in the abstract and throughout a computer controlled analysis of a microtiter assay result. Caulfield et al. shows in the methods section on page 207 that an automatic scanner/reader was used to determine the level of colored product in each well of a microtiter assay, and further shows throughout the paper a computer mediated analysis of the results of the assay.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the assay of Stavrianopoulos et al. by use of the computer mediated automatic scanning and raw data analysis of Caulfield et al. to save manual labor of analyzing the results of a colorimetric microtiter assay.

22. Claim 97 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stavrianopoulos et al. in view of Cooke et al. as applied to claims 17, 18, and 38 above, and further in view of Caulfield et al.

The claims are drawn to a kit comprising arrays of oligonucleotides comprising at least 72 different known oligonucleotides at different positions and scanners for detecting hybridization to the array.

Stavrianopoulos et al. in view of Cooke et al. as applied to claims 17, 18, and 38 above does not show computer mediated automatic scanning and raw data analysis of a colorimetric microtiter assay.

Caulfield et al. shows in the abstract and throughout a computer controlled analysis of a microtiter assay result. Caulfield et al. shows in the methods section on page 207 that an automatic scanner/reader was used to determine the level of colored product in each well of a

microtiter assay, and further shows throughout the paper a computer mediated analysis of the results of the assay.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the assay of Stavrianopoulos et al. in view of Cooke et al. as applied to claims 17, 18, and 38 above by use of the computer mediated automatic scanning and raw data analysis of Caulfield et al. to save manual labor of analyzing the results of a colorimetric microtiter assay.

23. Claims 17 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stavrianopoulos et al. in view of Molecular Biosystems Inc. (WO 85/01050, reference AF in the Information Disclosure Statement filed 08 December 2005).

The claims are drawn to arrays of oligonucleotides comprising different known oligonucleotides at different positions. In some embodiments the oligonucleotide is covalently linked to the support.

Stavrianopoulos et al. shows in column 1, lines 29-30, and column 5 an array of oligonucleotides, with a substrate that may be plastic or glass. Stavrianopoulos et al. shows in column 8, lines 40-45 that various (meaning different) polynucleotide samples may be present in the array. Stavrianopoulos et al. does not show covalent linkage of oligonucleotides to supports.

Molecular Biosystems Inc. shows covalent linkages of oligonucleotides to a solid support and use of such linked oligonucleotides for hybridization assays in pages 8-9, and 34-37.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the hybridization assay of Stavrianopoulos et al. by use of the covalent linkage of Molecular Biosystems Inc. because Molecular Biosystems Inc. shows that

Art Unit: 1631

such covalent linkages are useful to tether hybridized polynucleotide duplexes for purification of the hybridized duplex in hybridization assays.

***Response to Arguments***

24. Applicant's arguments filed 14 November 2005 regarding the prior art rejections have been fully considered but they are not persuasive. Those rejections of claims not reiterated in this Office action have been withdrawn. New grounds of rejection have been made over some claims. The applicants argue that Stavrianopoulos et al. uses the arrays for hybridization to probes, rather than using arrays of probes for hybridization to unknown samples. The intended use of the composition of Stavrianopoulos et al. is not relevant because Stavrianopoulos et al shows the claimed composition or makes obvious the claimed compositions in combination with other references as detailed above. Stavrianopoulos et al. shows use of known (and therefore predetermined) sequences on arrays. The applicants further argue that the samples of Stavrianopoulos et al are on different wells and are therefore on different surfaces, however a microtiter dish is a single surface comprising multiple depressions.

***Allowable Subject Matter***

25. Claims 27-37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

26. Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are

Art Unit: 1631

available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center at (800) 786-9199. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John S. Brusca whose telephone number is 571 272-0714. The examiner can normally be reached on M-F 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel, PhD. can be reached on 571 272-0718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1631

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*John S. Brusca 5 February 2006*

John S. Brusca  
Primary Examiner  
Art Unit 1631

jsb

INFORMATION DISCLOSURE STATEMENT

FORM PTO 1449 (modified)

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE

LIST OF REFERENCES CITED BY APPLICANT(S)  
(Use several sheets if necessary)

Date Submitted to PTO: December 20, 2005

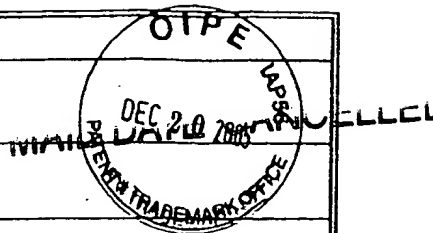
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SERIAL NO.  
09/422,804

APPLICANT  
Edwin Southern

FILING DATE  
October 22, 1999

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1631



U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
JB	62	4,689,405	8/1987	Frank et al.			
JB	86	5,348,855	9/1994	Dattagupta et al.			

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO
JB	61	1 526 708	9/1978	GB			
JB	98	0 119 573 A1	9/1994	EP			

OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

	1	David Kitchin QC and Richard Meade, Affymetrix' Opening Submissions, in the United Kingdom litigation between Oxford Gene Technology (OGT) v. Affymetrix, case nos. HC 1999 02517, HC 1999 04645, pages 1-81, March 22, 2001, London, United Kingdom.
no further	3	Bird & Bird, Notice to Admit Facts, in the United Kingdom litigation between Oxford Gene Technology (OGT) v. Affymetrix, case no. HC 1999 04645, pages 1-5, January 28, 2000, London, United Kingdom.
	4	Richard Meade, Bristows, Second Defendant's Response to the Claimant's Notice to Admit Facts, in the United Kingdom litigation between Oxford Gene Technology (OGT) v. Affymetrix, case no. HC 1999 04645, pages 1-3, June 22, 2000, London, United Kingdom.
	5	Bristows, Particulars of Independently Valid Claims, in the United Kingdom litigation between Oxford Gene Technology (OGT) v. Affymetrix, case no. HC 1999 04645, pages 1-2, June 22, 2000, London, United Kingdom.

EXAMINER

J. S. Bruce

DATE CONSIDERED

5 February 2006

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

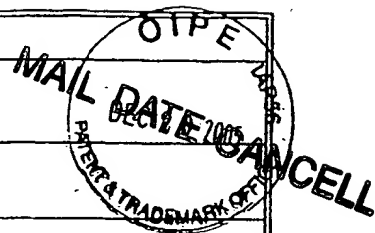


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*EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE

## FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO

## OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

- |    |  |
|----|--|
| 6  | Richard Meade, Bristows, Statement of Reasons, in the United Kingdom litigation between Oxford Gene Technology (OGT) v. Affymetrix, case no. HC 1999 04645, pages 1-4, June 30, 2000, London, United Kingdom.  |
| 7  | Bird & Bird, Statement of Opposition, in the United Kingdom litigation between Oxford Gene Technology (OGT) v. Affymetrix, case no. HC 1999 04645, pages 1-5, June 30, 2000, London, United Kingdom.   |
| 8  | Bird & Bird, Re-Re-Re-Amended Particulars of Objections, in the United Kingdom litigation between Oxford Gene Technology (OGT) v. Affymetrix, case no. HC 1999 04645, pages 1-5, March 13, 2001, London, United Kingdom.                                 |
| 9  | Alastair Wilson QC, Amended Particulars of Claim, in the United Kingdom litigation between Oxford Gene Technology (OGT) v. Affymetrix, case no. HC 1999 02517, pages 1-11, November 26, 1999, Oxford, United Kingdom.                                    |
| 10 | Bird & Bird, Amended Particulars of Infringement, in the United Kingdom litigation between Oxford Gene Technology (OGT) v. Affymetrix, case no. HC 1999 02517, pages 12-14, September 1, 2000, London, United Kingdom.                                   |
| 11 | Richard Meade, Defence and Counterclaim of the First and Second Defendants, in the United Kingdom litigation between Oxford Gene Technology (OGT) v. Affymetrix, case no. HC 1999 02517, pages 1-6, August 6, 1999, London, United Kingdom.              |
| 12 | Richard Meade, Amended Particulars of Objections of the First and Second Defendants, in the United Kingdom litigation between Oxford Gene Technology (OGT) v. Affymetrix, case no. HC 1999 02517, pages 21-37, January 15, 2001, London, United Kingdom. |

EXAMINER

DATE CONSIDERED

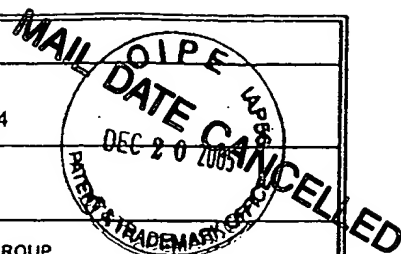
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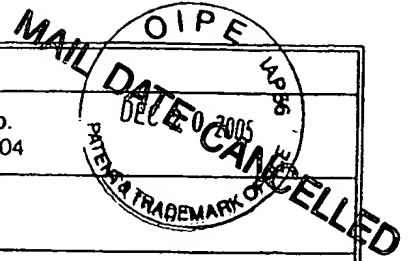
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Sheet 4 of 17		INFORMATION DISCLOSURE STATEMENT					
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U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		APPLICANT Edwin Southern					
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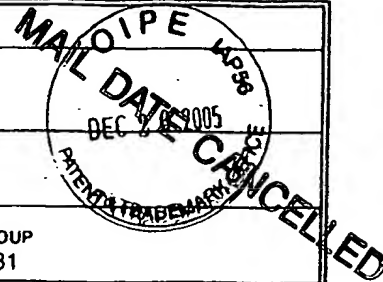
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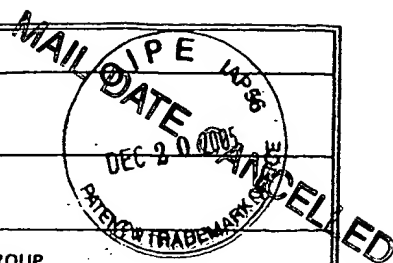
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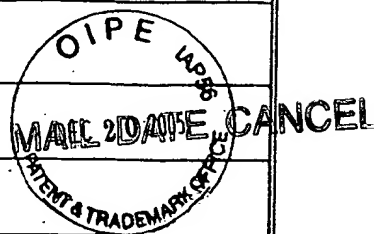
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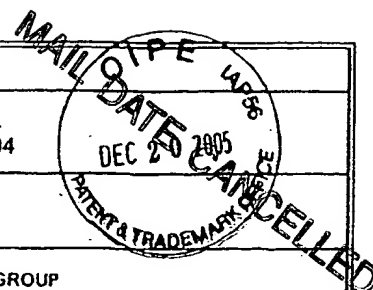
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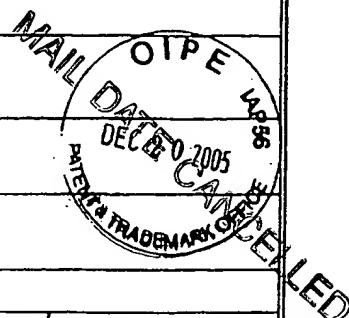
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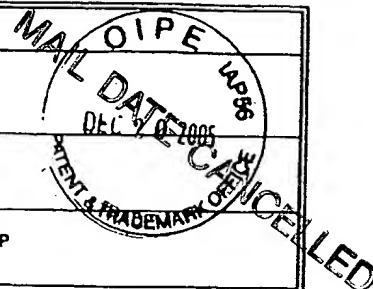


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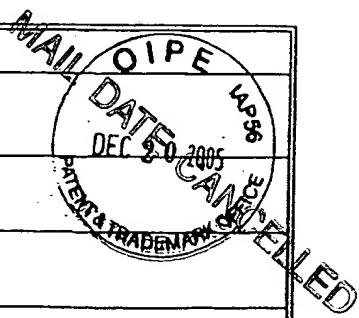
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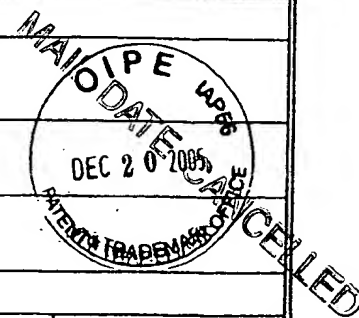
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JLB	84	Bannworth, W. et al., "A System for the Simultaneous Chemical Synthesis of Different DNA Fragments on Solid Support", DNA, Vol. 5, No. 5, pp. 413-419, 1986.
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JLB	87	Goldkorn, T. et al., "A simple and efficient enzymatic method for covalent attachment of DNA to cellulose; Application for hybridization-restriction analysis and for in vitro synthesis of DNA probes", Nucleic Acids Research, Vol. 14, No. 22, pp. 9171-9191, 1986.
JLB	88	Duncan, C. et al., "Affinity Chromatography of a Sequence-specific DNA Binding Protein Using Teflon-linked Oligonucleotides", Analytical Biochemistry, Vol. 169, pp. 104-108, 1988.
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JLB	91	Wallace, R. et al., "The use of synthetic oligonucleotides as hybridization probes. II. Hybridization of oligonucleotides of mixed sequence to rabbit beta-globin DNA", Nucleic Acids Research, Vol. 9, No. 4, pp. 879-894, 1981.
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JLB	93	File wrapper of S.N. 07/772,625 maturing into US 5,348,855 on September 1994 to Dattagupta et al., <i>filing date 04 October 1991</i>
EXAMINER		JLB. Bruner
DATE CONSIDERED		5 February 2006

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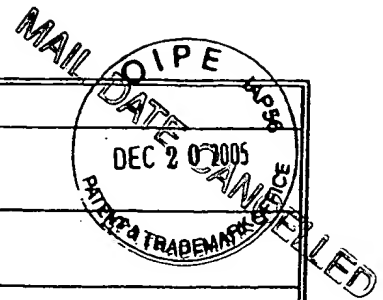
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	100	Blank Rome LLP, OGT's Technology Tutorial, in the United States litigation between Oxford Gene Technology (OGT) v. Mergen Ltd et al., U.S. District Court for the District of Delaware, CA No. 02-1695, pp. 1-28, December 2003, Wilmington, Delaware.
no publisher	101	Ashby & Geddes, Defendant Mergen, Ltd.'s Slide Presentation for the December 18, 2003 Tutorial, in the United States litigation between Oxford Gene Technology (OGT) v. Mergen Ltd et al., U.S. District Court for the District of Delaware, CA No. 02-1695, pp. 1-11, December 2003, Wilmington, Delaware.
	102	Patton Boggs LLP, Defendant Clontech Laboratories Slide Presentation for the December 18, 2003 Tutorial, in the United States litigation between Oxford Gene Technology (OGT) v. Mergen Ltd et al., U.S. District Court for the District of Delaware, CA No. 02-1695, pp. 1-33, December 2003, Wilmington, Delaware.
	103	Kirkland & Ellis LLP, Letter to Perkins Coie LLP enclosing OGT's Claim Terms, in the United States litigation between Oxford Gene Technology (OGT) v. Mergen Ltd et al., U.S. District Court for the District of Delaware, CA No. 02-1695, pp. 1-6, April 2004, Chicago, Illinois.

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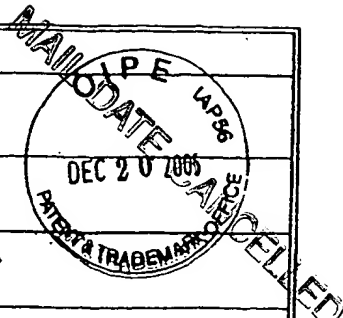


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	105	Dr. Paul Purdue, Expert Report of Paul Edward Purdue Ph.D., in the United States litigation between Oxford Gene Technology (OGT) v. Mergen Ltd et al., U.S. District Court for the District of Delaware, CA No. 02-1695, pp. 1-10, May 2004, New York, NY.
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	108	Blank Rome LLP, Oxford Gene Technology Ltd.'s Claim Construction Brief, in the United States litigation between Oxford Gene Technology (OGT) v. Mergen Ltd et al., U.S. District Court for the District of Delaware, CA No. 02-1695, pp. 1-186, July 2004, Wilmington, Delaware.
no	109	Potter Anderson & Corroon LLP, Mergen Limited's Opening Claim Construction Brief, in the United States litigation between Oxford Gene Technology (OGT) v. Mergen Ltd et al., U.S. District Court for the District of Delaware, CA No. 02-1695, pp. 1-37, July 2004, Wilmington, Delaware.
	110	Potter Anderson & Corroon LLP, Mergen Limited's Reply in Support of its Motion for Summary Judgment of Invalidity of Claim 1 of United States Patent NO. 6,054,270 Pursuant to 35 U.S.C. 112, in the United States litigation between Oxford Gene Technology (OGT) v. Mergen Ltd et al., U.S. District Court for the District of Delaware, CA No. 02-1695, pp. 1-9, August 2004, Wilmington, Delaware.
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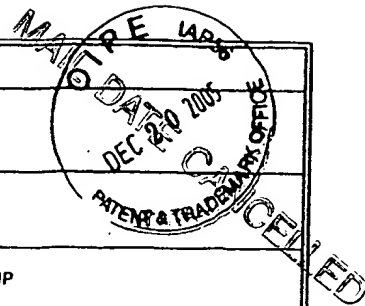
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	117	Blank Rome LLP, Oxford Gene Technology Limited's Opposition to Mergen Limited's Motion for Reconsideration, in the United States litigation between Oxford Gene Technology (OGT) v. Mergen Ltd et al., U.S. District Court for the District of Delaware, CA No. 02-1695, pp. 1-28, December 2004, Wilmington, Delaware.
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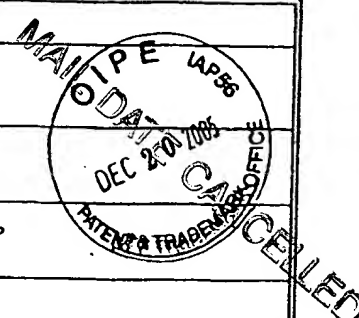


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no publisher	120	Order of the U.S. District Court on Mergen's Motion for Reconsideration, in the United States litigation between Oxford Gene Technology (OGT) v. Mergen Ltd et al., U.S. District Court for the District of Delaware, CA No. 02-1695, pp. 1-5, January 2005, Wilmington, Delaware.
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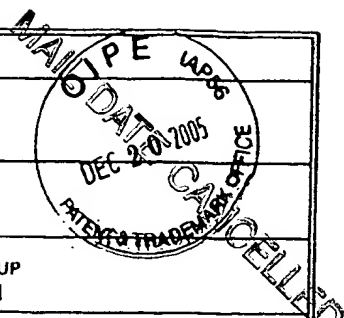
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	130	Michael Best & Friedrich LLP, OGT's Exhibit A Claim Chart, in the United States litigation between Oxford Gene Technology (OGT) v. Motorola, Inc., U.S. District Court for the Northeastern District of Illinois, CA No. 02-9344, pp. 1-10, March 2004, Chicago, Illinois.
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no publisher	132	Michael Best & Friedrich LLP, OGT's Exhibit H-R, in the United States litigation between Oxford Gene Technology (OGT) v. Motorola, Inc., U.S. District Court for the Northeastern District of Illinois, CA No. 02-9344, pp. 1-222, March 2004, Chicago, Illinois.
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	135	Civil Docket for CA No. 04-0013, Oxford Gene Technology (OGT) v. Telechem International, Inc., U.S. District Court for Delaware, pp. 1-7, April 2005, Wilmington, Delaware.
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JLB	AE	0 171 150	2/1986	EP				
JLB	AF	85/01051	3/1985	WO				
JLB	AG	0 268 237	5/1988	EP				
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	AI	Declaration from Radomir Crkvenjakov (with four exhibits), September 1996.
	AJ	Declaration from Ivan Labat, September 1996.
	AK	Statement from the Institute of Molecular Genetics and Genetic Engineering (IMGGE) in Belgrade, September 1996.
	AL	Statement by Professor Roger Ekins (with an abstract of a lecture given by him on 4/11/88 at a symposium, and a post-published paper corresponding to said lecture), December 1996.
no publisher	AM	Statutory Declaration of Dr. Nicholas Vaughan Ashely (with Exhibit NVA1), May 1995.
	AN	Statutory Declaration of Dr. William Bains (with Exhibits WB1, WB2 and WB3), May 1995.

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JLB	BG	0 238 332	9/1987	EP				
JLB	BH	2 156 074	10/1985	GB				
JLB	BI	0 237 362	9/1987	EP				

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No publisher	BJ	Declaration of Professor Lubert Stryer, January 1997.
	BK	Statutory Declaration of Dr. William Bains, January 1997.
	BL	Statutory Declaration of Dr. Nicholas Vaughan Ashley, January 1997.
	BM	Declaration of Edwin Mellor Southern (with Exhibits EMS1 and EMS2), January 1998.
	BN	Declaration of Dr. Thomas Gingeras, January 1999.
	BO	Declaration of Professor Calvin Quate, January 1999.

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JLB	CF	0 386 229	9/1990	EP				
JLB	CG	0 281 927	9/1988	EP				
JLB	CH	0 130 739	1/1985	EP				

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	CI	Declaration of Dr. Glenn Mc Gall, January 1999.
	CJ	Declaration of Edwin Mellor Southern, July 2001.
no publisher	CK	Bird & Bird, "Claimant's Notice of Experiments", In the United Kingdom Litigation between Oxford Gene Technology (OGT) v. Affymetrix, case no. HC 1999 02517, pp. 1-12, July 31, 2000, London, United Kingdom.
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JLB	DE	84/03151	8/1984	WO			
JLB	DF	0 194 132	9/1986	EP			
JLB	DG	0 063 810	11/1982	EP			
JLB	DH	0 130 523	1/1985	EP			

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JLB	DI	E. Calva et al., "Analysis of the in vitro Synthesis of 5'- $\gamma$ - <sup>32</sup> P-labeled Transcripts from Coliphage $\lambda$ by Gel Electrophoresis, RNA-DNA Hybridization, and RNase T1 Digestion", The Journal of Biological Chemistry, Vol. 255, No. 22, 1980, pp. 11011-11016.
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JLB	DL	J. M. Coffin et al., "Structure of the Genome of Moloney Murine Leukemia Virus: A Terminally Redundant Sequence" Cell, Vol. 13, No. 4, April 1978, pp. 761-773.
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EXAMINER

JLB. Bruser

DATE CONSIDERED

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ATTY DOCKET NO.  
99\_1174SERIAL NO.  
09/422,804APPLICANT  
Edwin SOUTHERNFILING DATE  
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1631

## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	EA						
	EB						

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO	
JLB	EC	0 142 299	5/1985	EP				
JLB	ED	86/06487	11/1986	WO				
JLB	EE	84/03564	9/1984	WO				
JLB	EF	86/00991	2/1986	WO				
JLB	EG	92/10092	6/1992	WO				

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JLB	EH	R. Drmanac et al., "Sequencing by Hybridization, Theory of the Method", poster presented at Cold Spring Harbor Symposium on Gene Mapping and Sequencing, April 27-May 1, 1988, Cold Spring Harbor, NY.
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JLB	EJ	R. Frank et al., "Simultaneous Synthesis and Biological Applications of DNA Fragments: An Efficient and Complete Methodology", Methods in Enzymology, Vol. 154, No. 13, 1987, pp. 221-251.
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J. S. Briscoe  
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	FA						
	FB						

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		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO	
JLB	FC	0 305 929	3/1989	EP				
JLB	FD	0 304 202	2/1989	EP				
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	GD							
	GE							
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<i>JSB</i>	GJ	T. R. Gingeras et al., "Hybridization Properties of Immobilized Nucleic Acid", Nucleic Acids Research, Vol. 15, No. 13, 1987, pp. 5373-5390.
<i>JSB</i>	GK	P.T. Gilham, "The Synthesis of Polynucleotide-Celluloses and Their use in the Fractionation of Polynucleotides", J. Am. Chem. Soc., Vol. 86, November 20, 1964, pp. 4982-4985.
<i>JSB</i>	GL	H. M. Geysen et al., "Strategies for Epitope Analysis using Peptide Synthesis", Journal of Immunological Methods, Vol. 102, 1987, pp. 259-274.
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*JSB. Bruce*

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*5 February 2006*

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	HC						
	HD						

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	HF						

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JLB	HI	Margaret L. M. Anderson et al., "Quantitative Filter Hybridisation", Nucleic Acid Hybridisation, A Practical Approach, 1985, pp. 73-111, IRL Press, Washington, D.C.
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JLB	HK	U. B. Voss et al., "The Immobilization of Oligonucleotides and Their Hybridization Properties", Biochemical Society Transactions, Vol. 16, 1988, pp. 216-217.
JLB	HL	Ghosh et al., "Covalent Attachment of oligonucleotides to Solid Supports", Nucleic Acids Research, Vol. 15, No. 13, 1987, pp. 5353-5372.
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JLB Bruce  
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	IB						

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JLB	ID	T. L. Bugawan et al., "Rapid HLA-DLB Typing Using Enzymatically Amplified DNA and Nonradioactive Sequencing-Specific Oligonucleotide Probes", Immunogenetics, Vol. 32, 1990, pp. 231-241.					
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JLB	IG	U. Maskos et al., "A Study of Oligonucleotide Reassociation using Large Arrays of Oligonucleotides Synthesised on a Glass Support", Nucleic Acids Research, Vol. 21, No. 20, 1992, pp. 4663-4669.					
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JA						

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DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO
JB					

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JCB	JC	U. Maskos et al., "A Novel Method for the Parallel Analysis of Multiple Mutations in Multiple Samples", Nucleic Acids Research, Vol. 21, No. 9, 1993, 2269-2270.
JCB	JD	M. J. Kozal et al., "Extensive Polymorphisms Observed in HIV-1 Clade B Protease Gene Using High-Density Oligonucleotide Arrays", Nature Medicine, Vol. 2, No. 7, July 1996, pp. 753-759.
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JCB	JF	Kirk-Othmer, Encyclopedia of Chemical Technology, Third Edition, Vol. 3, pp. 487-491, 1978.
JCB	JG	Kirk-Othmer, Encyclopedia of Chemical Technology, Third Edition, Vol. 15, p. 224, 1981.
JCB	JH	R. Polsky-Cynkin et al., "Use of DNA Immobilized on Plastic and Agarose Supports to Detect DNA by Sandwich Hybridization, Clinical Chemistry, Vol. 31, No. 9, 1985, pp. 1438-1443.
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JCB	JJ	G. H. Parsons, Jr., "Antibody-Coated Plastic Tubes in Radioimmunoassay", Meth., Enzymol., Vol. 73, 1973, pp. 224-238.
JCB	JK	Southern et al., Genomics, "Analyzing and Comparing Nucleic Acid Sequences by Hybridization to Arrays of Oligonucleotides", Vol. 13, 1992, pp. 1008-1017.
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JLB	KA	5,486,452	1/1996	Gordon et al.	435	5	
JLB	KB	4,994,373	2/1991	Stavrianopoulos et al.	435	6	
JLB	KC	4,968,602	11/1990	Dattagupta	435	6	
JLB	KD	4,961,915	10/1990	Martin	422	116	
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JLB	KF	4,451,433	5/1984	Yamashita et al.	422	63	
JLB	KG	5,202,231	4/1993	Drmanac	435	6	
JLB	KH	4,299,916	11/1981	Litman et al.	435	6	

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		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO
JLB	KI	84/01031	3/1984	WO			

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JLB	KJ	Webster's Third New International Dictionary, G & C Merriam Company, Publishers, Springfield, Massachusetts, USA, 1966, pages with the definitions of the terms "solid" and "sheet".
JLB	KK	The American Heritage Dictionary, Second College Edition, Houghton Mifflin Company, Boston, Massachusetts, 1991, page with the definition of the term "smooth".
JLB	KL	The Dictionary of Ceramic Science and Engineering, Plenum Press, New York, NY, 1984 - definition of "smooth glass".
JLB	KM	Academic Press Dictionary of Science and Technology, San Diego, CA, 1992 - definition of "smooth".
JLB	KN	S. F. Wolf et al., "Rapid Hybridization Kinetics of DNA Attached to Submicron Latex Particles", Nucleic Acids Research, Vol. 15, No. 7, 1987, pp. 2911-2926.
JLB	KO	J. N. Kremsky et al., "Immobilization of DNA via Oligonucleotides Containing an Aldehyde or Carboxylic Acid Group at the 5' Terminus", Nucleic Acids Research, Vol. 15, No. 7, 1987, pp. 2891-2909.

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	LD						
	LE						
	LF						
	LG						
	LH						

## OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

LI	Letter to Simon Kiddle from Dr. Renzo Malvano, November 2002.
LJ	Letter to Simon Kiddle from Dr. Gian Carlo Zucchelli, November 2002.
LK	Declaration of Professor Alberto Albertini, November 2002.
LL	Declaration of Dr. Gianni Messeri, November 2002.
LM	Second Statement of Professor Roger Ekins, January 2003.

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	MC						
	MD						

## OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

no publisher	ME	Slides used in Professor Ekins' lecture at the International Biotech RIA '88 Conference in Florence on 11 <sup>th</sup> April 1988.
JEB	MF	Lev. D. Gelb and K.E. Gubbins, "Characterization of Porous Glasses by Adsorption: Models, Simulations and Data Inversion", Fundamentals of Adsorption, Vol. 6, 1999, pp. 551-556.
JEB	MG	Pharmacia Catalogue 1998, page describing Hybond-NX.
no publisher	MH	Translation of EP A 0197266 filed for UK national validation, 1991.
no publisher	MI	E. M. Southern, Award Molecular Bioanalytics 2004, Biography.
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JEB	MK	Bio Array News, Vol. 1, No. 1, June 1, 2001, pp. 1-10.
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J.E.S. Bruner

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# **Notice of References Cited**

Application/Control No.

09/422,804

Applicant(s)/Patent Under

Reexamination

SOUTHERN, EDWIN

Examiner

John S. Brusca

Art Unit

1631

Page 1 of 1

## **U.S. PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
✓	*	A US-3,356,462	12-1967	COOKE NELSON M; et. al.	422/102
	B	US-			
	C	US-			
	D	US-			
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	F	US-			
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	N					
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	Q					
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## **NON-PATENT DOCUMENTS**

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
✓	U	Caulfield et al. A Computer Program for the Evaluation of ELISA Data Obtained Using an Automated Microtiter Plate Absorbance Reader. J. Immunol. Methods Vol. 74, pages 205-215 (1984)
✓	V	Suggs et al. Use of synthetic oligonucleotides as hybridization probes: Isolation of cloned cDNA sequences for human beta2-microglobulin. Proc. Natl. Acad. Sci. USA Vol. 78, pages 6613-6617 (1981)
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